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OF THE

TORREY BOTANICAL CLUB

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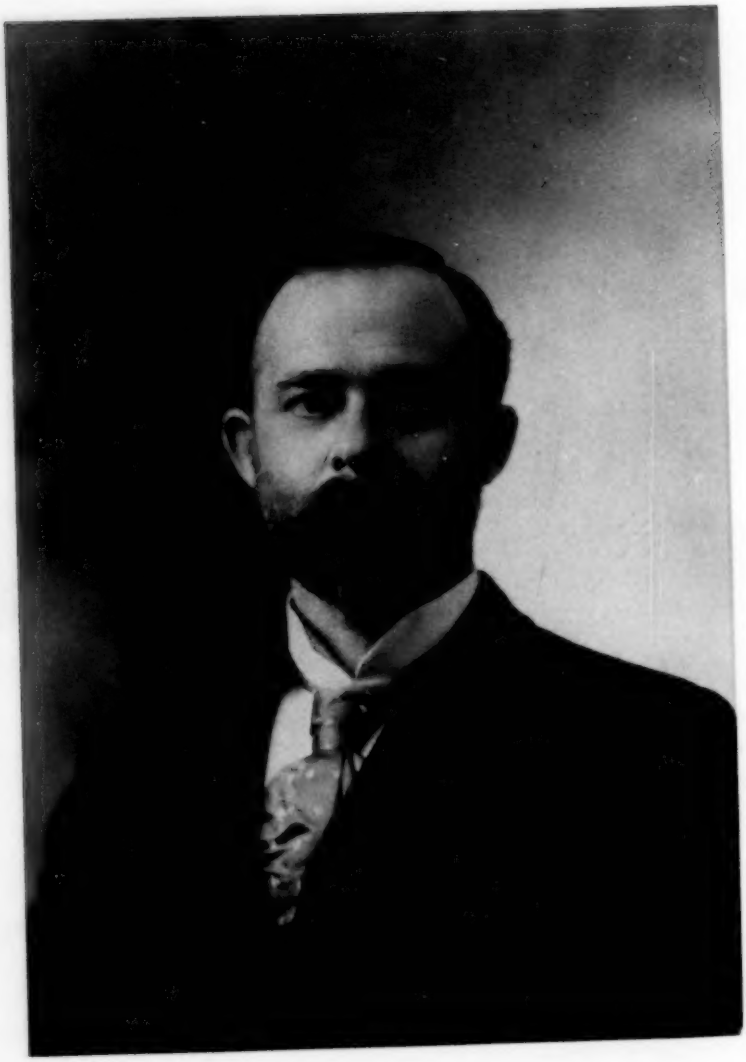
Errata

Page 5, line 6 from bottom, *for* Exiccatae *read* Exsiccatae.
Page, 200, line 13, *for* HORDACEUS *read* HORDEACEUS.
Page 241, line 6 from bottom, for *Scenedemus* read *Scenedesmus.*
Page 313, line 11, for *Hypomyces* read *Hypocrea.*
Page 319, line 3, *add date,* D 1907.
Page 362, line 11 from bottom, *for* "on *F. floridiana* (Moq.) Nutt." *read* "On *Froelichia floridana.*"
Page 435, line 19, *for* Berk. *read* Peck.
Page 444, line 11, *for* 875 c.c. *read* 975 c.c.
Page 451, line 19, *for* stroma *read* stoma.



Yours sincerely
Lucien M. Underwood

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OF THE

TORREY BOTANICAL CLUB

JANUARY, 1908

A biographical sketch of Lucien Marcus Underwood *

CARLTON CLARENCE CURTIS

(WITH A PORTRAIT)

Lucien M. Underwood was born on October 26, 1853, in a little house still standing in the town of New Woodstock, in central New York. He died at his home in Redding, Connecticut, November 16, 1907.

From early childhood he responded to the healthful surroundings of his home and developed into a lad with a buoyancy of spirit, a whole-heartedness, and with an interest in natural objects that remained the striking characteristics of the man. In the early days of his childhood there appeared those traits and predilections that were to guide him in his life-work. As a child he played with plants, making collections of grass-leaves and other objects. As he learned to read and write, he became interested in collecting papers and documents of all kinds and would prepare lists of celebrities and of events. Later, when his school days brought him in touch with natural science subjects, the house became the repository of rocks and minerals and the laboratory for such physical and chemical experiments as his ingenuity could devise. While at work on the farm as a mere lad, it was his custom to carry in his pocket a box so that no new thing, such as an insect, could escape him. In this connection, it is noteworthy that the stories and reading that are offered to childhood did not appeal to him unless true, nor did he have any liking for his studies until late in his teens when he began such subjects as the Peck-Ganong Physics, Gray's Structural Botany, etc. These subjects completely transformed him and he became

* Read at a memorial meeting of the Torrey Botanical Club, January 29, 1908.

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enthusiastic in all his studies. He would spend the lunch period in the room where the physical apparatus was stored and it was his custom to gather the botanical material for the entire class, carrying it three miles to school.

The surroundings and conditions under which he obtained his education will appear as rather strange to the youth of to-day. At five he began to attend the summer sessions at "the brick schoolhouse" of the district and so continued until he was eleven years of age, at which time he became one of the farm hands, and thenceforth time for educational work could be given him only during the winter terms. At the age of fifteen he entered Cazenovia Seminary, where he studied for two successive winters, and he was also able to pursue his work without interruption during the academic year of 1870–1871, during which session he secured the scholarship prize and the mathematical prize. An interesting record shows that he never missed a chapel or class exercise throughout this entire year, although during this student life at Cazenovia he lived at home, three miles distant, and usually walked to the seminary.

The idea of securing a college education was first suggested to him by Professor L. M. Coon (afterwards Judge Coon of Oswego) in 1870, but circumstances compelled him in the fall of 1871 to take charge of his father's farm, which he worked upon shares, lumbering in winter and performing the ordinary farm work in the summer. Such was his life for nearly two years, during which time he had been so impressed by reading Winchell's Sketches of Creation, Lyell's Principles of Geology, and other books that he determined to go to college. Accordingly he again attended Cazenovia Seminary during the spring term of 1873, when his unusual facility as a writer and his natural ability as a speaker became manifest for the first time. It should be added that these accomplishments were not entirely natural to young Underwood and were acquired only with very considerable, and to him, painful effort. During this term he represented the Philomathesian Society at the prize declamation contest, delivered his first public oration (this being a chapel exercise at that time), and was also selected as one of the speakers at the commencement exercises, though he was not a member of the graduating class.

The correspondence of this early period shows that the selection of the institution he was to attend was a matter of much concern and that he and his friends discussed the question for a long time, one university being debarred as a "Godless institution." The establishment of Syracuse University near his home, with Alexander Winchell as its first chancellor, decided the matter for him and accordingly in the fall of 1873 he entered this institution, registering in the scientific course.

Here again the surroundings and experiences during his college days make interesting reading. He soon became dissatisfied with the scientific course because deficient in the amount of work required and after seriously considering the advisability of completing the college work in three years, he finally decided to enter the Latin-scientific course although this necessitated the preparation of six books of Virgil, four orations of Cicero, Sallust, Roman History, and Latin Prose. His ability as a speaker again secured for him a place at the Junior Exhibition, an oratorical contest, and also as one of the commencement speakers. His favorite studies were history, mathematics, and geology, the two former by reason of the serious treatment and logical presentation of the subjects and the latter by reason of his natural liking for the biological aspects of the science. This is shown by his devoting ten extra hours per week to this subject during the winter term of his junior or senior years, without credit so far as his college course was concerned. It should be stated that the other sciences offered in the university did not appeal to him strongly, doubtless because they could not be properly presented at that time. This is indicated by the fact that he never enjoyed the use of a microscope during his entire college course save for "one happy afternoon" when he had the rare treat of using a stand and examining a few stock slides that were furnished with microscopes at that time, such as the foot of a fly or the "scales from a butterfly's wing." That he was drawn to the subject in which his life-work finally centered is shown by his starting the compilation of an herbarium in 1875 and, self-instructed, he began a study of the ferns, collecting in Herkimer and other localities specimens which he later characterized as scrappy and of no value. It should be added that he gave a great deal of attention to entomology and perhaps this study appealed to him quite as strongly as any other.

Another feature of his college life not in accord with present day conditions was the absence of the vacation habit. During one summer he attempted canvassing "with negative results" and during two seasons he worked upon farms in the vicinity of Syracuse. In this manner he earned sufficient money in 1876 to enable him to visit New York City and the Centennial Exposition at Philadelphia, thus giving him his first view of the outside world.

At the time of his graduation in 1877 he had made up his mind to enter the teaching profession, but he became so discouraged over his failure to secure a position that he seriously meditated entering other lines of work. He finally secured the principalship of the Morrisville Union School at a salary of $700 per year, going on trial at $600 if *not* satisfactory. It would appear as if his experiences at this school would have forever driven any thoughts of teaching from his mind. The school was ungraded and he was obliged to conduct fourteen classes a day. The situation was complicated during the winter session by the entrance of a number of large country boys whose scholastic aim was, according to the light of those days, to break up the school. Nevertheless he succeeded, reduced the course of study to a system, and published the first catalogue and courses of study of the institution. The real nature and strength of the man is well shown at this period. He was evidently undecided and uncertain as to the future, though no records of his views are at hand. But that different fields of activity were appealing to him is evinced by the fact that he not only found time to complete the study of Gray's Anatomy, Dalton's Physiology, and a work on chemistry, practically the first year's work at the Syracuse Medical College, but he also completed a year's graduate work, taking the master's degree at Syracuse University in the spring of 1878. It is also noteworthy that he apparently purchased his first work on ferns (Hooker's Synopsis Filicum) at this time and commenced the accumulation of his valuable fern herbarium.

He was elected teacher of natural science in Cazenovia Seminary for the year 1878–1879 and in July, 1878, published in Case's Botanical Index his first botanical paper. This was a brief note containing a list of 44 ferns (species and varieties) occurring about Syracuse, N. Y., and all but four having been found by him

in that locality. A request was made for exchange of native or foreign specimens. During this year at Cazenovia he was able to complete his graduate work in geology, publishing his thesis in 1879 on "The Geological Formations Crossed by the Syracuse and Chenango Valley Railroad," with a sketch of the hydrography of Onondaga and Madison counties.

The following year he was called to the professorship of natural sciences in Hedding College, Abingdon, Illinois, where in addition to the science work he had a class in English literature; in a letter to a friend he writes that he had a hard time keeping ahead of a junior class, five hours a week, using Deschanel's Physics. His labors closed at this institution in the spring with his taking charge for four weeks of the president's class in Butler's Analogy! It was during this busy period that he conceived the idea and prepared the manuscript for a manual of the ferns of North America.

In 1880 he became professor of geology and botany at the Illinois Wesleyan University, at Bloomington, Illinois, where he remained three years. This was a period of unusual activity, as well as one of great diversity of interests. He experienced, so it seemed to him then, the greatest ambition of his life — the publication of his manuscript on the ferns. This work appeared in 1881 as a small octavo volume of 116 pages, containing a description of 147 species, under the title of "Our Native Ferns and How to Study Them." The edition was limited to 400 copies and was sold out within the year. A second edition ("Our Native Ferns and Their Allies") was published the following year, the larger portion of it being subsequently destroyed by fire, and the third edition was entrusted in 1888 to Henry Holt and Company, who issued the sixth revised edition in 1900.

It was during this period that he became interested in the Hepaticae and began the accumulation of the literature on the group. He also had access to Austin's Hepaticae Boreali-Americanae Exiccatae at the Illinois State Laboratory of Natural History, one mile distant from the university. He soon conceived the idea of publishing a manual of the group on the plan of his work on ferns and from the sources above mentioned a catalogue of the Hepaticae was compiled and published in 1884 in the Bulletin of the Illinois State Laboratory of Natural History under the

title, "Descriptive Catalogue of the North American Hepaticae North of Mexico." This interest in the hepatics continued until 1899 and resulted in the accumulation of a valuable herbarium and library and in the production of over a score of papers. Notable among his contributions in this line are the "Hepaticae Americanae," a series of exsiccatae, issued in part jointly with O. F. Cook, the last decades appearing in 1899 as Nos. XIX–XX. He prepared the text on the Hepaticae for Gray's Manual of Botany, sixth edition, published in 1890, and had also formulated plans for an extended systematic presentation of the North American Hepaticae. Only the first part of this work was ever completed, appearing in June, 1893, as one of the Memoirs of the Torrey Botanical Club (Vol. 4, No. 1), under the title, "Index Hepaticarum, Part I, Bibliography."

He was often joined in his collecting trips about Bloomington by Professor Forbes and his associates at the State Laboratory and from this source arose his renewed interest in the arthropods; especially was he attracted to the study of the spiders and crustaceans. The extent of this interest is shown by the fact that at the time when he left zoölogical work in 1890 he had accumulated entomological literature that was quite extensive and had published several preliminary papers, mostly bibliographical, on the Arachnida, Myriapoda, and Crustacea.

The marked ability of Professor Underwood to enlist the interests and secure the coöperation of others is strikingly illustrated during his stay at Bloomington. His field work had taken him to various sections of the state and brought him in contact with men interested in scientific work. Mention might be made of Burrill, Seymour, Forbes, Webster, and others. Largely through these associations the organization of the Indiana Academy of Sciences was effected in 1885. He took an active part in the early history of the society, being one of the promoters of the organization and one of the first directors of the biological survey of the state.

In 1883 he was called to Syracuse University as instructor in geology, zoölogy, and botany, and three years later was made professor. During the seven years of his service at Syracuse we find his labor and interest no less diversified than at Bloomington.

In addition to the subjects mentioned above, he taught analytical chemistry, mathematics for three years, and during the last year of his service, human physiology. He always had a great liking for this subject and frequently referred to this freshman class as the most interesting, enthusiastic, and enjoyable class of his experience. This appears the more interesting in connection with an extract from a letter in which he states, "I have a class of eighty-seven students in a room that will seat fifty fairly well. Ventilation is a difficulty and the period extends from twelve to one, after some of the class have had continuous work since 7:45 A. M."

During his stay at Syracuse he succeeded in introducing laboratory work in biology as a required subject, although this was limited to a two-hour course in the spring term of the second year — such was the opposition to innovations of this nature. Owing to limited facilities for work, it was necessary to divide this class into sections, which often necessitated the repetition of the work on four successive afternoons. This period marks the turning point in his career. Gradually he abandoned the study of zoölogy and discontinued the accumulation of works upon the Arthropoda, on which group, at that time, he had an extensive working library. Henceforth he gave his attention to cryptogamic botany, continuing his work on the hepatics and becoming interested in the mosses and especially in the fungi.

His herbaria of the lower plants increased rapidly, owing to his extensive collecting and especially through exchanges which were made possible by reason of his numerous visits to centers of botanical interest. Thus in 1884 he visited Asa Gray at Cambridge, and he often enthusiastically referred to the assistance received and the friendships formed at the various meetings of the American Association for the Advancement of Science, notably at the Philadelphia meeting in 1884, where he first met many botanists that he had known by correspondence; and at the Ann Arbor meeting in 1885, where he roomed in a private house with Arthur, Barnes, and Coulter, while they were making the final review of their "Handbook of Plant Dissection." He spent the summer of 1887 in Georgia, Tennessee, and Virginia, in the service of the Smithsonian Institution, and during the following summer he was occupied in collecting, largely in southern California.

The results of the labor of these years appears in several papers upon the Hepaticae, ferns, and fern allies, while his growing interest in the fungi is indicated by the appearance in 1889 (under joint authorship with O. F. Cook) of "A Century of Illustrative Fungi" and his "Generic Synopses of the Basidiomycetes and Myxomycetes." Both of these works were designed to enable the beginner to become somewhat familiar with the fungi, the first work being a collection of one hundred of our more common species put up in book form.

Securing a year's leave of absence in 1890, he accepted a Morgan fellowship at Harvard University for the purpose of studying the Sullivant and Taylor collections of hepatics and he also had in mind a revision of the Polyporaceae, in which group he had been working for several years. This work was interrupted early in 1891 by his undertaking for the Department of Agriculture a study of the extent and distribution of the orange disease in Florida. This investigation enabled him to make large collections in many sections of Florida and he also made an excursion into Cuba, in the hope of securing extensive collections of ferns. Returning north in April, he collected at several stations in Georgia and resumed his work at the Gray Herbarium.

While at Cambridge he accepted a professorship of botany at De Pauw University, Greencastle, Indiana. This was the first time in his career that he had the opportunity to direct his attention to botany alone, and it is noteworthy that he accepted this position at a lower salary than he was receiving and also at the same time declined a more remunerative position in another institution in order to specialize more closely. There now followed a period of work under the most congenial surroundings and during these four years he published numerous papers on the lower groups of plants. He was a member of the original committee on nomenclature at the Rochester meeting of the American Association in 1892 and was selected as the delegate to carry the report of the American botanists on this question to the International Botanical Congress in Genoa. He was one of the vice-presidents of the Genoa Congress and took part in the discussion which resulted in fixing 1753 as the date of commencing botanical nomenclature. He was greatly influenced by this visit to the Continent, and took

advantage of the opportunity to examine the famous herbaria and become acquainted with the botanical leaders in his line of study, such as Prantl, Strasburger, Ascherson, Magnus, Ward, Chodat, Saccardo, De-Toni, Baillon, and others. The interest thus aroused led him repeatedly to visit England and the Continent, in all making eight trips for the purpose of comparison and study at various botanical centers.

He had for a long time contemplated the preparation of a work on the cryptogamic flora of North America modeled somewhat on the pattern of Rabenhorst's Kryptogamen-Flora, but his views broadened as a result of his continental experiences, and early in 1893 he wrote a letter to Professor Britton proposing the formation of a body to organize a general descriptive work on the flora of North America. This resulted in the creation of a standing board of editors of the "Systematic Botany of North America," which was subsequently transferred to Underwood and Britton under the new title, "North American Flora," to be published by the New York Botanical Garden. He served as vice-president of the Botanical Section of the American Association at the New York meeting in 1894.

Owing to financial difficulties at De Pauw, the department of botany was temporarily abolished in 1895, when he accepted a position as professor of biology in the Alabama Polytechnic Institute. He was interested chiefly in fungi during this stay at Auburn and made extensive collecting trips in several of the southern states. Several papers were published upon the fungi, dealing chiefly with their economic importance. Owing to the difficulty of approaching the study of these plants, he began the collection of the extensive and scattered literature of the subject with a view to preparing a work that would serve as an introduction to the study of the group. Later, this material was put into form and appeared in 1899 as a volume entitled "Moulds, Mildews, and Mushrooms." During this period he completed the text on the Pteridophyta for Britton and Brown's Illustrated Flora.

After one year at Auburn he became professor of botany in Columbia University in July, 1896. Up to this period his life had indeed been a varied one, but it is not to be inferred that this was due to any uncertainty of purpose or lack of perception. Three

times he had accepted less remunerative positions in order to confine his work more closely to the lower forms of plant life and now for the first time he had the opportunity of realizing the ambition of his life. His interest now became more and more centered in the ferns and he enthusiastically devoted all his energies to studying and amassing collections of these plants. This work necessitated extended collecting trips in the United States and in the West Indies as well as repeated visits to the herbaria of Europe for comparison and study of material.

His career at Columbia has been attended by signal honor. He was one of the ten botanists elected at the Madison meeting of the American Association to form the Botanical Society of America, of which organization he served as president in 1899–1900. He became editor of the publications of the Torrey Botanical Club in 1898 and acted in this capacity until the end of 1902. He was associate editor of "North American Flora" from the beginning of his work at Columbia, during which period five parts have appeared. He was a member of the board of Scientific Directors of the New York Botanical Garden and since 1901 was the chairman of this board. In 1906 Syracuse University recognized his long and eminent service by conferring upon him the degree of doctor of laws.

His work at Columbia has been most fruitful and far-reaching in its results. The publication of his manuscript on "Moulds, Mildews, and Mushrooms" in 1899 stimulated study along this line and assisted greatly in establishing mycological clubs in many sections of the country. His numerous papers on the Pteridophyta and the recent revisions of his book upon "Our Native Ferns and Their Allies" have presented a rational system of classification of the group and a conception of its relationships and of the problems to be considered in its study that will serve as a guide in the investigation of these plants for generations to come.

In reviewing this brief account of Professor Underwood's life and his varied activities we are impressed with the traits that actuated and controlled him. He inherited an energy and a keenness of interest, a curiosity and a quickness of perception regarding living things that are the endowment of few. These characteristics led him irresistibly to the study of natural history and explain the

enthusiasm with which he pursued the various lines of his life-work. To him the keenest pleasure and the best recreation was life in the field, whether the exploration led him in quest of new forms of life or to a reëxamination of familiar types. He had an intense ambition to accomplish work. To us this was the dominant trait of his character. His, however, was not an ambition to excel or gain recognition, not a desire for reputation or notoriety, but an impulse to add to the sum of human knowledge and a broadening of the understanding. And to this work he brought that rare quality of arousing interest where none existed, so that his labor is not finished but has been handed to others — his students, his friends. His work has been essentially that of a pioneer. He has blazed the trails and prepared the roads that others may follow and continue the work to greater advantage.

In this estimate of the man we must not overlook other traits of his personality. To all he was the light-hearted, genial associate, but to those in need of assistance he was the sympathetic and helpful friend; and to such his energies were given with an unselfishness that remains as the most cherished memory of the man to so many. The simplicity of his nature, the genuineness of his interest, and his desire to share and to help constitute the charm of a personality that drew people to him and made them his friends.

These higher traits of his nature stand out supreme in his home life. In August, 1881, he married Miss Marie A. Spurr and thenceforth the home was the one place around which all other interests centered. The love of wife and daughter, the sympathies and the enjoyments of the home, was the one theme towards which his thoughts ever drifted. Among his treasured papers, and there are so many of these, is one, in his wife's handwriting, pocket-worn almost past the point of legibility. No better insight into the nature of the man can be given than to repeat a few stanzas of this manuscript:

"Sweet home upon the hillside fair,
Wherever I may roam,
Through southern grove or western wild,
Thou'rt yet my cherished home.
Thy portals wide
For me still hide
The dearest earthly room

"Above the city's noise and strife
Oft has my soul found rest,
As to the weary work-dimmed eye
Thou gavest visions blest.
On land or sea
I turn to thee
As worn bird to her nest.

"Thence have I marked the seasons tread
Their stately solemn round;
Thence have I watched the Storm-King's flight
On angry mission bound.
In winter drear
Or summer's cheer
Thou'rt ever hallowed ground.

"How have I loved at eve to pause
And scan the western sky,
What time the sun with affluence flung
His crimson banners high.
A promise fair
Of days more rare
When life's last night draws nigh.

"Above thy gabled roofs
The heavens bend more low;
The ceaseless tides of human life
Below thee ebb and flow.
Within thy walls
Love's gentle calls
Make Paradise below."

Our friend rests in a place which almost seems to have been designed by nature for him, on a hillside in the little rural cemetery of Umpawaug at Redding, bordered by two fern-banked streams babbling down to the near-by glen of the Saugatuck, through which he so much loved to take his friends.

Lucien Marcus Underwood: a memorial tribute *

MARSHALL AVERY HOWE

An appreciation of the character and work of Lucien M. Underwood that shall be wholly impartial and dispassionate can hardly be expected of those who were intimately associated with him during a considerable number of the most productive years of his life. Yet those, more than others, knew the man as he was and as he worked, and they are for that reason entitled to a hearing. It was my privilege to begin a correspondence with him in 1892 at a time when I was making the acquaintance of some of the Californian Hepaticae in the field and was trying to learn something of their published history without the advantage of access to much of the pertinent literature. Professor Underwood had then for ten years been accumulating Hepaticae and the literature relating to this group of plants, had published his "Descriptive Catalogue of North American Hepaticae, North of Mexico" and his elaboration of the group in the sixth edition of Gray's Manual, and was the acknowledged American leader in this line of taxonomic research. The ferns and their allies, knowledge of which, also, he had been efficient in popularizing, were likewise submitted to him, and his generous and helpful responses did much to foster and stimulate my interest, as they did that of many others. In the autumn of 1896 he assumed the duties of the professorship of botany in Columbia University, and my more intimate personal association with him began at that time, for he then offered me an opportunity to continue my studies of the Californian Hepaticae in New York and most generously and encouragingly placed at my service not only his extensive library and herbarium but also the results of his wide experience. In this connection, and in acknowledging my lasting gratitude to Professor Underwood, I am constrained to remark that the breadth of a man's mind and the purity of his desire for the truth is often best indicated in his attitude toward opinions and beliefs which may chance to differ

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from his own. In studying the Hepaticae of California it happened in a few instances that I reached conclusions more or less at variance with views to which he had previously given expression in print, as indeed may be expected at any time as a matter of personal equation between any two investigators in the biologic sciences. In such cases, Professor Underwood was always manifestly without bias or prejudice, desiring only the whole truth and confident that the truth alone would ultimately prevail. In fact, his breadth of view and the comprehensiveness of his sympathies were characteristics which impressed themselves upon even casual acquaintances. His work as a teacher of college students was not confined to exclusively botanical lines until he had reached nearly middle age. In his earlier manhood he not only taught geology, zoölogy and chemistry, in addition to botany, but also published several papers dealing with geological, zoölogical, and biological subjects. And his personal acquaintance with plants was remarkably wide even outside of the ferns, the Hepaticae, and the fungi, the groups in which he found his special fields for research. Accordingly, his outlook upon botanical science as a whole had a breadth and sanity that is all too rare in the men that have been schooled in an age of more extreme specialization.

Any just estimate of the scientific work of Professor Underwood cannot fail to emphasize its influence in popularizing botanical knowledge and in rendering it more accessible. Sufficient evidence of the importance of this phase of his work is found in the fact that his "Our Native Ferns and their Allies," with slight variation in title, passed through six editions from 1881 to 1900. This little book was essentially a pioneer in its field, was admirably conceived and charmingly written, and it cannot be an exaggeration to assert that it has done more to stimulate and popularize the study of the American ferns than has any other single agency. The "Descriptive Catalogue of the North American Hepaticae" was likewise a pioneer in its line. It brought together in a convenient form information that had previously been very difficult of access to the ordinary student. It, unhappily, was never reprinted, but that it met a real demand is evidenced by the difficulty with which even second-hand copies were obtainable within a few years after its publication. His "Moulds, Mildews, and Mushrooms,"

published in 1899, was written in a somewhat popular vein as an introduction to the study of the fungi and has served a useful purpose.

In considering the more technical aspects of Professor Underwood's botanical work, one is impressed by his instincts for collecting and systematizing, by his ability to express results in a terse, vigorous, synoptical form, and by the importance which he attached to the study of living plants in their natural surroundings as distinguished from the study of their mummified remains in herbaria. In addition to numerous excursions of a more local nature, he made visits to Florida, California, Porto Rico, Jamaica, and Cuba, for the purpose of making collections and field-studies of the Hepaticae and Pteridophyta. The desirability or even the necessity of such a first-hand acquaintance with the living plants in order to gain any adequate notion of their affinities is sufficiently apparent nowadays as regards any particular group, but is perhaps especially obvious in connection with the tropical tree-ferns, species of which, in some cases, have unfortunately been described from small fragments of the dried leaves. As complementary to the study of living plants in their own homes and to the study of herbarium specimens and the literature pertaining to them, Professor Underwood insisted upon the importance of seeing, if possible, the original or taxonomic "type"-specimen whenever the first description left any reasonable doubt as to the identity of the plant.

In his several visits to Europe, he had seen and examined the materials from which most of the endemic American species of ferns were originally described, in so far as such materials are preserved, and also many foreign types with which American specimens had been identified — sometimes erroneously — by the earlier writers. The results of these comparisons have in part been incorporated in his published papers and in part they will become available to his successors through his unpublished notes and sketches. Professor Underwood's enthusiasm for the correct interpretation of all proposed genera and species was naturally correlated with an interest in other questions connected with the nomenclature of plants. His views in such matters were pronounced; they were forcefully advocated and warmly defended. In the ranks of the reformers and restorers, he was one of the most radical and most logical, one of the least compromising and

least temporizing. Fifty years hence, perhaps, it will be generally conceded that he rendered a notable service to botanical science in insisting upon the importance of nomenclatural types for genera and species, upon the importance of anchoring a specific name to a certain definite specimen by which the validity of the species is to be judged, and upon the importance, in like manner, of pinning a generic name down to a certain definite species, to prevent the endless wandering and shifting which have found such portentous beginnings during the past two centuries. He saw clearly the futility of action like that of a recent International Botanical Congress in decreeing that certain generic names shall be "conserved" without taking the trouble to specify for what they shall be conserved. But names and their correct application, important as he considered them, were after all incidental details in the accomplishment of his main purposes. It was for many years his ambitious hope to assist in the publication of a descriptive flora of North America that should include all the known plants from the lowest to the highest, with the entire continent and the West Indian islands as its field. That he took a leading part in planning such a work he would doubtless consider the crowning effort of his life. That he lived to see the actual publication of five parts of a projected work of such a scope is a source of gratification to his friends.

Lucien M. Underwood was devoted to the world of plants, but he was more devoted to the world of human beings. Nothing human was foreign to him. He loved the beautiful in literature and art as well as the beautiful in the exterior world. His intimates will not soon forget the sympathetic fervor with which he could read selected passages from Victor Hugo's Les Misérables or from a treasured Life of Abraham Lincoln, or the delicacy with which he could describe his emotions on first beholding the Lion of Lucerne. His pupils will not soon forget the hours that he cheerfully gave to their assistance or the personal interest that he felt in their welfare. His friends will not soon forget his generosity, his forbearance, his sympathy, or his loyalty. Lucien M. Underwood might have been a farmer, he might have been an actor, he might have been a physician, he might have been a preacher; but, he was a botanist and a human human-being — and botany and humanity are the richer.

The published work of Lucien Marcus Underwood*

JOHN HENDLEY BARNHART

The accompanying list of Professor Underwood's publications comprises 212 entries. Nearly two hundred of these relate directly to botanical topics, and it is noteworthy that his first two papers, like his last three, dealt with ferns, and more than one third of the entire number were devoted to the Pteridophyta. The entries may be classified according to subject as follows:

Botanical:	
Pteridophyta	78
Hepaticae	31
Fungi	29
Reviews	17
Miscellaneous	43
Non-botanical:	
Zoölogy	7
Genealogy	2
Geology	1
Miscellaneous	4
Total	212

The various papers and sets of exsiccatae are listed as nearly as possible in chronological order, and nearly all of them have been examined while this bibliography has been in course of preparation. It would be rash to assert that the list is complete, but it is hoped that it approximates completeness. It should be explained, however, that no attempt has been made to include contributions to newspapers, of which it is believed that there were many.

During the years 1898–1902, Professor Underwood was editor-in-chief of the Torrey Botanical Club, and as such edited volumes 25–29 of the Bulletin and a part of volume 6 and all of volumes 7–12 of the Memoirs. The last two numbers of volume 12 of the Memoirs were not published until 1906 and 1907, but Professor Underwood, at the request of his successor, saw them through the press, and his name appears as editor upon the title-page of the

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volume. As editor of the Bulletin, he supervised the preparation of the Index to recent literature relating to American botany, published in monthly instalments throughout the term of his editorship. He did not, however, do all of the work of preparation of material for the Index.

Professor Underwood left no considerable amount of unpublished manuscript in a sufficiently advanced state to make it likely that it will be published posthumously. A portion of his manuscript of the Pteridophyta for the North American Flora can be utilized in the forthcoming numbers of that work, in the establishment of which he held such an important place and in the progress of which he took such a lively interest. He had also nearly ready for publication a genealogy of the Underwood families of America, which he had hoped to see through the press during the present winter of 1907–1908. It is much to be desired that some way may be found of issuing this work in accordance with his wishes.

1878

1. List of ferns growing in the vicinity of Syracuse, Onondaga Co., N. Y. Case's Bot. Index **1**: 80. Jl 1878.
2. *Aspidium marginale* Swartz. Bull. Torrey Club **6**: 266. O 1878.

1879

3. The geological formations crossed by the Syracuse and Chenango Valley Railroad. 18 pages. Syracuse, N. Y., [Jl] 1879.
   Thesis for the degree of doctor of philosophy.

1880

4. Artificial synopses. Bull. Torrey Club **7**: 86–89. Au 1880.

1881

5. Our native ferns and how to study them. 116 pages, *illust.* Bloomington, Ill., 1881.
6. Check list of North American Pteridophyta, excluding the orders Filices and Ophioglossaceae.
   Not seen; mentioned in Bot. Gaz. **6**: 192. Ap 1881.
7. The ferns of New York state. Bull. Torrey Club **8**: 78, 79. Jl 1881.
8. Systematic plant record. Bloomington, Ill., 1881.
   Afterward published by C. W. Bardeen, Syracuse, N. Y.
9. *Onoclea sensibilis* L. var. *obtusilobata* Torr. Bull. Torrey Club **8**: 101, 102. S 1881.

1882

10. North American Hepaticae. Bot. Gaz. **7**: 18–21. F 1882.
Also as a separate.

11. Our native ferns and their allies, with synoptical descriptions of the American Pteridophyta north of Mexico. A second and enlarged edition of Our native ferns and how to study them. 134 pages, *illust.* Bloomington, Ill., [Je] 1882.
The stock of this edition remaining unsold in 1886 was destroyed by fire in a Chicago bindery (see Bot. Gaz. **12**: 23).

12. *Equisetum variegatum.* Bot. Gaz. **7**: 76. Je 1882.

1884

13. The Pteridophyta of Litchfield Co., Ct. Bull. Torrey Club **11**: 7, 8. Ja 1884.

14. Schweinitz and American Hepaticae. Bot. Gaz. **9**: 63. Ap 1884.

15. A brief notice of the Underwood families of Massachusetts. New Engl. Hist. & Geneal. Reg. **38**: 400–405. O 1884.
Also as a repaged separate: The Underwood families of Massachuseetts. 8 pages.

16. Descriptive catalogue of the North American Hepaticae, north of Mexico. Bull. Illinois State Lab. Nat. Hist. **2**: 1–133. O 1884.
Also as a separate.

1885

17. A preliminary list of the Arthrogastra of North America (excluding Mexico). Can. Entom. **17**: 162–169. S 1885.
Also as a repaged separate, 8 pages.

18. The North American Myriapoda. Entom. Am. **1**: 141–151. N 1885.

1886

19. (With HERBERT OSBORN.) Preliminary list of the species of Acarina of North America. Can. Entom. **18**: 4–12. Ja 1886.
Also as a repaged separate, 8 pages.

20. List of the described species of fresh water Crustacea from America, north of Mexico. Bull. Ill. State Lab. Nat. Hist. **2**: 323–386. [O] 1886.

1887

21. Alumni record of Syracuse University, 1872–1886. xii + 368 pages. Syracuse, N. Y., Ja 1887.
Editor of the entire work; contributor of: Annals of Syracuse University, pages 9–30.

22. (With ORATOR FULLER COOK.) Notes on the American species of *Marsilia*. Bull. Torrey Club **14**: 89–94. My 1887.
Also as a separate.

23. The Scolopendridae of the United States. Entom. Am. **3**: 61–65. Jl 1887.

24. The progress of arachnology in America. Am. Nat. **21**: 963–975. N 1887.
Also as a separate.

25. (With ORATOR FULLER COOK.) Hepaticae americanae; decades I–II (nos. 1–20). N 1887.
Exsiccatae; 40 sets.

1888

26. The fern allies. Bot. Gaz. **13**: 22, 23. Ja 1888.
A review of Baker's Hand-book of the fern-allies.

27. The distribution of *Isoetes*. Bot. Gaz. **13**: 89–94. Ap 1888.
Also as a separate.

28. Our native ferns and their allies, with synoptical descriptions of the American Pteridophyta north of Mexico. Third edition, revised. xii + 156 pages, *illust.* New York, 1888.

29. Some undescribed Hepaticae from California. Bot. Gaz. **13**: 112–114. *pl. 3–6.* My 1888.
Also as a separate.

30. The clover rust. Bot. Gaz. **13**: 301, 302. N 1888.

31. (With ORATOR FULLER COOK.) Hepaticae americanae; decades III–IV (nos. 21–40). N 1888.
Exsiccatae; 40 sets.

1889

32. [Review of] The development of *Pilularia globulifera* L. By D. H. Campbell. Bull. Torrey Club **16**: 138. 8 My 1889.

33. Notes on our Hepaticae — I. Northern species. Bot. Gaz. **14**: 191–198. Au 1889.
Also as a separate.

34. (With ORATOR FULLER COOK.) A century of illustrative fungi, with generic synopses of the Basidiomycetes and Myxomycetes. 21 pages. Syracuse, N. Y., S 1889.
Text, with accompanying exsiccatae (nos. 1–100).
The same text was issued separately under the title: Generic synopses of the Basidiomycetes and Myxomycetes. 21 pages. [Syracuse, N. Y., S 1889.]

35. (With ORATOR FULLER COOK.) Hepaticae americanae; decades V–VI (nos. 41–60). N 1889.
Exsiccatae; 40 sets.

1890

36. Hepaticae. In: GRAY, ASA. Manual of the botany of the northern United States, sixth edition, 702–732. *pl. 22–25.* New York, 1890.

37. (With ORATOR FULLER COOK.) Hepaticae americanae; decades VII–VIII (nos. 61–80). My 1890.
Exsiccatae; 40 sets.

38. A notable collection of botanists. Bull. Torrey Club **17**: 154, 155. 9 Je 1890.

39. Notes on the heterosporous fern allies of the Pacific coast and Mexico. Zoe **1**: 97–101. Je 1890.
Also as a separate.

40. A new North American *Lejeunea*. Bull. Torrey Club **17**: 258 259. 9 O 1890.

1891

41. A preliminary list of Pacific coast Hepaticae. Zoe **1**: 361–367. F 1891.
Also as a separate.

42. (With ORATOR FULLER COOK.) Hepaticae americanae; decades IX–X (nos. 81–100). My 1891.
Exsiccatae; 40 sets.

43. (With ORATOR FULLER COOK.) List of mosses collected by T. S. Brandegee in the Yakima region of Washington, 1882–3. Zoe **2**: 107, 108. Jl 1891.

44. The distribution of Hepaticae of North America. Proc. Am. Assoc. Adv. Sci. **39**: 298–304. Jl 1891.
Also as a separate.

45. The ancestry and descendants of Jonathan Pollard (1759–1821), with records of allied families. 20 pages. Syracuse, N. Y., 1891.
Two hundred copies, privately printed.

46. Diseases of the orange in Florida. Jour. Myc. **7**: 27–36. 10 S 1891.

47. A flora of Texas. Bot. Gaz. **16**: 268, 269. S 1891.
A review of Coulter's Manual of the phanerogams and pteridophytes of western Texas.

48. (With ORATOR FULLER COOK.) Hepaticae americanae; decades XI–XII (nos. 101–120). D 1891.
Exsiccatae; 40 sets.

1892

49. (With ORATOR FULLER COOK.) Hepaticae americanae; decades XIII–XIV (nos. 121–140). My 1892.
Exsiccatae; 40 sets.

50. Recent work in systematic hepaticology. Bot. Gaz. **17**: 218–220. Jl 1892.

51. Connecting forms among polyporoid fungi. Zoe **3**: 91–95. Jl 1892.

52. Some points in the nomenclature-priority question. Science **20**: 116, 117. 26 Au 1892.

53. The Hepaticae of Labrador. Bull. Torrey Club **19**: 269, 270. 10 S 1892.
Also as a separate.

54. A variety of *Polypodium vulgare* L., new to America. [Abstract.] Bull. Torrey Club **19**: 283, 284. 10 S 1892.
A correction. Bull. Torrey Club **20**: 21. 15 Ja 1893.

55. A few additions to the hepatic flora of the Manual region. Bull. Torrey Club **19**: 299–301. 10 O 1892.
Also as a separate.

56. A preliminary comparison of the hepatic flora of boreal and subboreal regions. Bot. Gaz. **17**: 305–312. O 1892.
Abstract in Proc. Am. Assoc. Adv. Sci. **41**: 219, 220. D 1892.

57. The nomenclature question at Genoa. Bull. Torrey Club **19**: 325–330. 15 N 1892.
Also as a separate.

58. The international congress at Genoa. Bot. Gaz. **17**: 341–347. N 1892.
Also as a separate.

59. The distribution of tropical ferns in peninsular Florida. Proc. Indiana Acad. Sci. **1891**: 83–89. 1892.
Also in a separate of pages 83–91 (this paper and the following).

60. Some additions to the state flora [of Indiana] from Putnam County. Proc. Indiana Acad. Sci. **1891**: 89–91. 1892.
Also in a separate of pages 83–91 (this paper and the preceding).

61. Carl Moritz Gottsche. Bot. Gaz. **17**: 417, 418. D 1892.

62. The botanical congress. Bot. Gaz. **17**: 425, 426. D 1892.

1893

63. The dissipation of energy in college education. Addresses Indiana Coll. Assoc. **1892**: 30–46. 1893.

64. [Address before the Genoa Botanical Congress.] Atti Congr. Bot. Internaz. Genova 113–116. 1893.

65. (With ORATOR FULLER COOK.) Hepaticae americanae; decades XV–XVI (nos. 141–160). My 1893.
Exsiccatae; 40 sets.

66. Index Hepaticarum. Part I. — Bibliography. Mem. Torrey Club **4**: 1–91. 10 Je 1893.
Constituting Mem. Torrey Club, vol. 4, no. 1.

67. Our native ferns and their allies, with synoptical descriptions of the American Pteridophyta north of Mexico. Fourth edition, revised. xii + 156 pages, *illust.* New York, 1893.

68. A review of the literature of the North American Myriapoda. Bull. U. S. Nat. Mus. **46**: 9–17. [N] 1893.
Also editor of the entire Bulletin: BOLLMAN, CHARLES HARVEY. The Myriapoda of North America.

69. Pteridophyta. Mem. Torrey Club **5**: 9–17. 4 D 1893.
Forming part of the List of Pteridophyta and Spermatophyta growing without cultivation in northeastern North America, prepared by a Committee of the Botanical Club, American Association for the Advancement of Science.
The entire List was also issued as a separate.

1894

70. A fern-book offer. Linnaean Fern Bull. 1^3: 6. Ja 1894.

71. Pteridophyta. In: COULTER, JOHN MERLE. Botany of western Texas (Contr. U. S. Nat. Herb. **2**:) 557–568. 10 My 1894.

72. A new *Selaginella* from Mexico. Bull. Torrey Club **21**: 268, 269. 20 Je 1894.

73. Notes on our Hepaticae — II. The genus *Riccia*. Bot. Gaz. **19**: 273–278. Jl 1894.
Also as a separate.

74. Report of the botanical division of the Indiana State Biological Survey. Proc. Indiana Acad. Sci. **1893**: 13–67. Au 1894.
The actual report occupies pages 13–19; Appendix A, Bibliography of Indiana botany, pages 20–30; Appendix B, List of cryptogams at present known to inhabit the state of Indiana, pages 30–67.
Also as a separate.

75. Our present knowledge of the distribution of pteridophytes in Indiana. Proc. Indiana Acad. Sci. **1893**: 254–258. Au 1894.

76. The evolution of the Hepaticae. Bot. Gaz. **19**: 347–361, *illust.* 15 S 1894.
Vice-presidential address before Section G, A.A.A.S.
Also as a separate.
Also in Proc. Am. Assoc. Adv. Sci. **43**: 259–274, *illust.* Mr 1895.
Also as a separate, "1894" [1895].

77. Edible fungi — a great waste of vegetable food in Indiana. Trans. Indiana Hort. Soc. **1893**: 62–67. *pl.* 1894.
Also as a repaged separate, 8 pages.

78. Indiana flora. Distributed by the Biological Survey. Series I (1–100), Parasitic fungi. D 1894.
Exsiccatae; 20 sets.

1895

79. Hepaticae. 7 pages. [New York,] Ja 1895.
This was a prospectus (containing only one genus, *Riccia*) of a work to be entitled "Systematic botany of North America." The publication of the work was not actually commenced until ten years later, and then under the changed title "North American flora."

80. Notes on our Hepaticae — III. The distribution of our North American Marchantiaceae. Bot. Gaz. **20**: 59–71. 16 F 1895.
Also as a separate.

81. The relations of the red cedar to our orchards. Trans. Indiana Hort. Soc. **1894**: 81–84. 1895.

82. The classification of the archegoniates. Bull. Torrey Club **22**: 124–129. 27 Mr 1895.
Also as a separate.

83. An interesting *Equisetum*. Bot. Gaz. **20**: 326. 15 Jl 1895.

84. An increasing pear disease in Indiana. (Abstract.) Proc. Indiana Acad. Sci. **1894**: 67. O 1895.

85. The variations of *Polyporus lucidus*. (Abstract.) Proc. Indiana Acad. Sci. **1894**: 132, 133. O 1895.

86. The proposed new systematic botany of North America. (Abstract.) Proc. Indiana Acad. Sci. **1894**: 133. O 1895.

87. Report of the botanical division of the Indiana State Biological Survey for 1894. Proc. Indiana Acad. Sci. **1894**: 144–156. O 1895.
The actual report occupies pages 144–147; Appendix A, List of additions to the state flora, pages 147–153; Appendix B, Additional list of host plants of fungi, 1894, pages 153, 154; Appendix C, Notes on the species reported previously, page 154; Appendix D, List of parasitic fungi distributed by the Indiana Biological Survey, December, 1894, series 1, no. 1–100, pages 154–156.

1896

88. [Review of] The structure and development of mosses and ferns. By Douglas Houghton Campbell. Science **II. 3**: 70, 71. 10 Ja 1896.

89. Notes on our Hepaticae — IV. The genus *Fossombronia*. Bot. Gaz. **21**: 67–71. 18 F 1896.
Also as a separate.

90. (With FRANKLIN SUMNER EARLE.) Treatment of some fungous diseases. Bull. Ala. Agr. Exp. Sta. no. 69 (**4**: 243–272). F 1896.

91. On the distribution of North American Helvellales. Minn. Bot. Studies **1**: 483–500. 30 Ap 1896.
Also as a separate, in advance, 10 Mr 1896.

92. Our native ferns and their allies, with synoptical descriptions of the American Pteridophyta north of Mexico. Fifth edition, revised. xii + 156 pages, *illust.* New York, 1896.

93. (With ORATOR FULLER COOK.) Hepaticae americanae; decades XVII–XVIII (nos. 161–180). Ap 1896.
Exsiccatae; 40 sets.

94. Mycology in the southern states. Gard. & For. **9**: 263, 264. 1 Jl 1896.

95. Pteridophyta. In: BRITTON, NATHANIEL LORD, & BROWN, ADDISON. An illustrated flora of the northern United States, Canada, and the British possessions, **1**: 1–48. New York, [Au] 1896.

96. (With FRANKLIN SUMNER EARLE.) The distribution of the species of *Gymnosporangium* in the South. Bot. Gaz. **22**: 255–258. 23 S 1896.
Also as a separate.
Abstract in Science **II. 4**: 437. 25 S 1896.

97. Notes on the allies of the sessile *Trillium*. [Abstract.] Science **II. 4**: 436. 25 S 1896.

98. The genus *Cephalozia* in North America. Bull. Torrey Club **23**: 381–394. 25 O 1896.
Also as a separate: Contr. Dep. Bot. Columbia Univ. no. 101.

99. (With FRANKLIN SUMNER EARLE.) Notes on the pine-inhabiting species of *Peridermium*. Bull. Torrey Club **23**: 400–405. 25 O 1896.
Abstract in Science **II. 4**: 437. 25 S 1896.

100. *Coleosporium Campanulae* (Pers.) Wint. Bull. Torrey Club **23**: 423. 25 O 1896.

101. Edible fungi: a wasted food product. Bull. Ala. Agr. Exp. Sta. no. 73 (**4**: 335–346. *f. 1–3*). O 1896.

102. Flour considered from the standpoint of nutrition. Bull. Ala. Agr. Exp. Sta. no. 74 (**4**: 347–358). O 1896.

103. The habitats of the rarer ferns of Alabama. Bot. Gaz. **22**: 407–413. *pl. 21.* 23 N 1896.
Also as a separate.
Abstract in Science **II. 4**: 436. 25 S 1896.
The final paragraph was reprinted in Fern Bull. (**5**: 63, 64. O 1897) under the title: *Trichomanes Petersii.*

104. Report of Biologist. Ann. Rep. Agr. Exp. Sta. Ala. **8**: 20, 21. 1896.

105. Terminology among the orders of thallophytes. Bull. Torrey Club **23**: 526–532. 29 D 1896.
Also as a separate: Contr. Dep. Bot. Columbia Univ. no. 109.

1897

106. Some new fungi, chiefly from Alabama. Bull. Torrey Club **24**: 81–86. 28 F 1897.
Also as a separate: Contr. Dep. Bot. Columbia Univ. no. 113.

107. Notes on the American Hydnaceae — I. Bull. Torrey Club **24**: 205, 206. 24 Ap 1897.

108. The varieties of *Botrychium ternatum*. Fern Bull. **5**: 28, 29. Ap 1897.

109. [Review of] Laboratory practice for beginners in botany. By William A. Setchell. Science **II. 5**: 735, 736. 7 My 1897.

110. (With FRANKLIN SUMNER EARLE.) A preliminary list of Alabama fungi. Bull. Ala. Agr. Exp. Sta. no. 80 (**5**: 111–284, i–xvii). "Ap" [Je] 1897.
Pages 271–284 are devoted to an appendix: Suggestions to collectors of fleshy fungi (these pages were reprinted in pamphlet form, see no. 112).

111. Species of *Botrychium*. Bot. Gaz. **23**: 464–466. 28 Je 1897.

112. Suggestions to collectors of fleshy fungi. 14 pages. Cambridge, [Mass.,] 1897.
Reprinted from Bull. Ala. Agr. Exp. Sta. no. 80 (see no. 110).

113. The ferns of Scolopendrium Lake. Fern Bull. **5**: 53, 54. O 1897.

114. Additions to the published lists of Indiana cryptogams. Proc. Indiana Acad. Sci. **1896**: 171, 172. [O] 1897.
Also as a repaged separate, 2 pages.

1898

115. *Selaginella rupestris* and its allies. Bull. Torrey Club **25**: 125–133. 19 Mr 1898.
Also as a separate: Contr. Dep. Bot. Columbia Univ. no. 136.

116. The study of botany in high schools. Jour. Pedag. **11**: 181–191. Ap 1898.
Also as a separate: Contr. Dep. Bot. Columbia Univ. no. 144.

117. [Review of] Die Farnkräuter der Erde. By H. Christ. Science **II. 7**: 572–574. 22 Ap 1898.

118. [Review of] Syllabus der Pflanzenfamilien. Zweite, umgearbeitete Ausgabe. Von Dr. Adolph Engler. Science **II. 8**: 136–139. 29 Jl 1898.

119. American ferns — I. The ternate species of *Botrychium*. Bull. Torrey Club **25**: 521–541. 15 O 1898.
Also as a separate: Contr. Dep. Bot. Columbia Univ. no. 150.

120. Two recently named genera of Basidiomycetes. Bull. Torrey Club **25**: 630, 631. 16 D 1898.
Also as a separate.

1899

121. (With ORATOR FULLER COOK.) Hepaticae americanae; decades XIX–XX (nos. 181–200). 1899.
Exsiccatae; 40 sets.

122. American ferns — II. The genus *Phanerophlebia*. Bull. Torrey Club **26**: 205–216. *pl. 359, 360.* 15 My 1899.
Also as a separate: Contr. Dep. Bot. Columbia Univ. no. 156.

123. A new *Cantharellus* from Maine. Bull. Torrey Club **26**: 254, 255. 15 My 1899.

124. The Royal Botanic Gardens at Kew. Science **II. 10**: 65–75. 21 Jl 1899.

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Professor Underwood's relation to the work of the New York Botanical Garden*

NATHANIEL LORD BRITTON

Through his appointment as professor of botany in Columbia University, Professor Underwood became by virtue of this office a member of the Board of Scientific Directors of the New York Botanical Garden in 1896. He has thus been a member of the Board of Managers of the Garden throughout its entire period of development. He has been fertile in advice and suggestion concerning all the educational and research work of the institution, and has been indefatigable in the building up of its collections, especially the museum and herbarium series of cryptogamic plants. The voluntary curatorial work on the collections of ferns and fungi accomplished by him has been of unusual value owing to his intimate knowlege of these groups, and students under his direction have greatly increased the value of the cryptogamic collections, both by the addition of specimens and by the critical determination of collections already secured. He kept the Garden in touch with students of ferns all over the world, and it will be long before the institution has the advantage of the presence of an authority such as Professor Underwood on ferns and fern allies, his chosen field.

The herbarium collections accumulated by Professor Underwood during his busy life are already in part the property of the Garden, he having presented all his flowering plants, and his pteridophytes and Hepaticae having been purchased, the latter being bought in 1907. His collections of fungi and of mosses are at Columbia University.

In recognition of Professor Underwood's services to the Garden and of his contributions to botanical science, the Board of Managers have resolved to designate the entire fern herbarium of the Garden "The Underwood Fern Herbarium," and to place a suitable tablet on one of the cases containing these collections.

* Read at a memorial meeting of the Torrey Botanical Club, January 29, 1908.

The Scientific Directors of the Garden have adopted the following preamble and resolution:

WHEREAS, Death has removed from this Board Professor Lucien Marcus Underwood, our associate from the commencement of our organization, and our chairman since the year 1901,

We therefore desire to record an expression of our profound sorrow at the severance of such happy personal relations as have always existed between the deceased and the members of this Board, and at the untimely ending of a career of such present value and of such great promise.

We desire also to place upon record our appreciation of the great value to the New York Botanical Garden of the services rendered by Professor Underwood, both in his official capacity, and by virtue of his high and broad scholarship.

As our chairman, Professor Underwood has always performed his duties in a prompt, studious, and efficient manner, and has shown rare wisdom in conserving the higher interests of the institution and of those served by it.

As an original investigator in those lines of research which it is the object of the Garden to promote, Professor Underwood has displayed untiring energy, combined with independence and originality, and his work has been fruitful in many important contributions to science.

As an advisor and guide in the investigations of others, here and elsewhere, Professor Underwood has exerted a wide influence, and has displayed unselfish devotion and a generous regard for the interests of those so engaged.

The cheerfulness and general good-fellowship of Professor Underwood in his personal relations with us, and with the members of the Garden staff, has been such as to combine the most pleasant recollections with the most sorrowful regret that we are to enjoy him no more.

Resolved, That a copy of this memorial be transmitted to the family of Professor Underwood, and that the same be entered upon our minutes and published in the Garden *Journal*.

Resolutions adopted by the Torrey Botanical Club and other scientific organizations in relation to the death of Lucien Marcus Underwood

The Torrey Botanical Club

At a memorial meeting of the Torrey Botanical Club, held at the museum of the New York Botanical Garden, January 29, 1908, the following minute was adopted:

In the death of Lucien Marcus Underwood American botany has lost one of its foremost representatives; one who was exceptionally free from prejudice and selfishness and who abhorred all superficiality and obsequiousness. The Torrey Botanical Club has lost a faithful officer and a zealous and enthusiastic supporter of all its activities and interests.

We desire to pay tribute to his superior qualifications and attainments as a man of science, and to express our profound sorrow as we attempt to realize that we shall no more feel the warm clasp of his hand, meet the glance of his sympathetic eye, or hear his cheering words of counsel and encouragement.

The Torrey Botanical Club hereby directs that this minute be entered in its proceedings and duly published with them.

The American Association for the Advancement of Science

At the fifty-eighth meeting of the American Association for the Advancement of Science, held at the University of Chicago, December 30, 1907, to January 4, 1908, the following resolutions were adopted by Section G (botany):

Whereas: By the lamented death of Dr. Lucien Marcus Underwood, late professor of botany in Columbia University, science has suffered a severe loss and the American Association for the Advancement of Science, particularly the Botanical Section, has been deprived of an active and esteemed member, be it

Resolved, That this society place on record its recognition of his fruitful labor along his chosen lines in the field of scientific research and instruction, and its keen appreciation of the stimulating influence of his personal character and scholarly attainments.

THE PHILADELPHIA BOTANICAL CLUB

At a meeting of the Philadelphia Botanical Club, held on the evening of November 21, 1907, the following resolutions were adopted:

WHEREAS: The Philadelphia Botanical Club has learned of the sad death of the distinguished botanist, Lucien M. Underwood, professor of botany in Columbia University, be it

Resolved, That by his death botanical science has suffered an irreparable loss, his personal character, his professional standing, and his scientific attainments, particularly in his special line of work on the ferns and allied plants, having won for him the sincere admiration and regard not only of his associates, but of his fellow workers in the field of science.

Resolved, That the Philadelphia Botanical Club records its appreciation of his labors and its deep sense of the loss which American botanical science has sustained.

THE FERN CLASS OF THE BOTANICAL SOCIETY OF PENNSYLVANIA

The Fern Class of the Botanical Society of Pennsylvania, now assembled, having learned of the death of the well-known botanist, Lucien M. Underwood, professor of botany in Columbia University, desires to place on the record of its minutes the following appreciation of his earnest and fruitful labors, and its deep sense of the loss which botanical science has sustained.

By the death of Dr. Underwood botanical science has suffered an irreparable loss. His personal character, his professional qualifications, and his scientific attainments, particularly in his special field of work on the ferns and other lower orders of plants had won for him the loving regard of his associates and the sincere admiration of his fellow workers in the field of science.

PHILADELPHIA, November 23, 1907.

[*Signed*]

Adolph W. Miller, Pres.
John M. Macfarlane, Sec'y.
Henry Kraemer
Marion Mackenzie
S. L. Schumo
L. D. Woodbridge
Sam'l P. Seese, M.D.
Mary G. Spencer
Caroline A. Burgin
Thos. Spencer
Emma T. Fell
Mrs. W. Findlay
Wm. Findlay
George T. Hastings

E. B. Ulrich
E. Newton Harvey
Lucy C. Gendell
Chas. S. Williamson
Katharine S. Nicholson
Martha H. Hollinshead
Florence Yaple
Carlotta H. Browne
Mrs. Geo. T. Hastings
Mary L. Yarnall
Edith H. Abbott
Lydia R. Linvill
Edith M. Farr
Ernest K. Thomas
Lydia Prichett Borden
Herbert Greensmith
Henry C. Savage.

INDEX TO AMERICAN BOTANICAL LITERATURE
(1907)

The aim of this Index is to include all current botanical literature written by Americans, published in America, or based upon American material; the word America being used in its broadest sense.

Reviews, and papers which relate exclusively to forestry, agriculture, horticulture, manufactured products of vegetable origin, or laboratory methods are not included, and no attempt is made to index the literature of bacteriology. An occasional exception is made in favor of some paper appearing in an American periodical which is devoted wholly to botany. Reprints are not mentioned unless they differ from the original in some important particular. If users of the Index will call the attention of the editor to errors or omissions their kindness will be appreciated.

This Index is reprinted monthly on cards, and furnished in this form to subscribers, at the rate of one cent for each card. Selections of cards are not permitted; each subscriber must take all cards published during the term of his subscription. Correspondence relating to the card-issue should be addressed to the Treasurer of the Torrey Botanical Club

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